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# EDITORIAL

## NAUNYN'S AUTOBIOGRAPHY [1]

When Naunyn came to die, he was defined by his pupil, Magnus Levy, as a man of kingly nature; and, truly, the leonine old gentleman of the portrait prefacing these memoirs might have graced a throne with more strength and dignity than many a monarch we know of. Not so the taut, sharp-eyed, sharp-featured young man of the group further on, a not particularly engaging figure in provincial overcoat and flat billycock hat, fingering the inevitable cigar, more of the hard-bargaining business type than physician-like—the "impudent *Berliner*" of tradition. Haply "best men are moulded of their faults," and Naunyn's story conveys, as none other, the enobling effect of medicine, practiced in honor, upon the development of character; for all the pains and labors, the trials and sorrows of an honest physician's life are in this remarkable book. Like the sudden lifting and dropping of a curtain, the self-contained Nordic gives, at the start, a momentary glimpse of the best side of himself, the weak spot in his armor. And how beautifully he does it!

"One of the men I love is Don Quixote. It has long since been settled that this singular hero is no ordinary fool, but what his creator intended him to be, a very fine gentleman. Perhaps it is even true that every man who is noble-minded, who is not lacking in imagination, has something of Don Quixote in him."

Appreciation of the meridional by "the nations of the moral North" is apt to be grudging, and Naunyn, when he wrote these lines was worn and world-weary from the

[1] B. Naunyn: *Erinnerungen, Gedanken und Meinungen.* München, 1925.

strain of the setbacks and disappointments attending his last great work, the erection of the big university hospital at Strassburg; but his perception of Alonso el Bueño is as secure and fine as Turgenieff's in the immortal close of "Hamlet and Don Quixote," or, shall we say, as in the glowing finale of Richard Strauss.

In East Prussia, the family "Noynyn" dated back to 1364 and rose out of mechanical employments to the pastor and schoolmaster status, those inevitable "planks to respectability," as Baas has termed them. Naunyn's father, a burgomaster of Berlin, a host and counselor of royalty, well connected all over East Prussia, was serious up to hypochondria, worrying (his son relates) about such non-essentials as the devastating effects of hailstorms upon crops which he himself did not possess. The Berlin of Naunyn's boyhood (the late forties) was, in his own phrase, "a small-town capital," its best residential streets made up of monotonous rows of unattractive houses, going back, some said, to the days of Frederick William I, the cellars of the ground floors used as hutches by very small tradesmen, the sewage discharging frankly into the streets, with continuity of horrific odors in summer and congealed filth in winter. What a contrast to the Berlin of our recollection, clean as a whistle, the standard object lesson of the sanitarian, suggesting the model cities we build at the base of children's Christmas trees, with magnificent ornate suburbs at Wilmersdorf, Charlottenburg and Gross Lichterfelde! The schoolboys of the period were anything but "ducking mice," indeed hardy, obstinate, contentious, conceited youngsters, more than a match for the schoolmaster, yet afraid of "ghosts." Naunyn himself was like that, just a mischievous, natural boy, bent on annoying other people, self-willed, indifferent to studies, a reader of Cooper's novels, and already physically hardened by sticking out long, bitter, winter days of exposure on hunting expeditions. He attributes the straightlaced Puritanism of his mature period to his father and a certain feeling for the finer side of life to an elder sister. Never once did he

regard laziness or lumpish tendencies as "transvaluations" in the Nietzschean sense. He is, in fact, mildly scornful as to the recent pother about preserving the "individuality of the child," which he regards as a poor school for developing character and a sign of weak or degenerated stock. It would require an expert grammarian to parse the formidable sentence at the bottom of page 22, but the sense of it is plainly "spare the rod and spoil the child."

The narrative begins dramatically with the March days of revolution (1848), a period of gunfire and barricades in the streets, a stray shot killing a servant girl in front of the Naunyn doorway on the Linden. The father, then head-burgomaster, takes his children to the barricades, where he addresses the disaffected in vain, spends days and nights in close conference with the king, whom he accompanies on his ride through the town, yet steers such an even course between his natural toryism and the liberal extremists that he is coldly regarded on both sides and is the last to be "decorated." For safety, the family are sent to relatives in big business at Königsberg. Crossing the Weichsel on a lighter, a victoria forces its way on to the craft behind the post-wagon and, driven backward by the rearing of the horses, is hurled, with its driver, into the angry current, to disappear beneath the waves. Quiet in Berlin is not restored until late October. The period up to the accession of Wilhelm I, Naunyn describes as "lethargic," a period of study by tallow dips, when the executioner still broke delinquents on the wheel, when sexual culprits (if women) did penance on platforms, as in the "Scarlet Letter," and when processionals of charity boys moved through the streets, singing at doors like Christmas waits. Naunyn is quite frank about the sexual torments of youth and, for various reasons associated with self-development, regards the maintenance of school-boy friendships in after life as dubious, unnecessary and undesirable. Of all his boyhood companions, he retained the regard of but one, whom he had already known from childhood; of his university days, only his body servant, Max Mollard.

The turning point of his life came from a remarkable teacher (Jungk), who awakened his mind by the following train of reasoning: Strength makes might and might makes right, but might is evil in itself and is often imposed as "hereditary." The only way to break the vicious circle is through personal nobility (*Vornehmheit*), *i.e.,* the strong will, of necessity, disdain the baser arts and subterfuges whereby the weak sometimes survive and arrive. The lesson conveyed (*Noblesse oblige*) was little in itself, he says, but it gave him a settled aversion to the arrogance of "ruling classes." He became a Prussian liberal of the extreme left, always voting that ticket. Another leading motive he got from the Church Fathers, *viz.,* the distinction between venial sins, which are temperamental, therefore pardonable, and mortal sins, or evil actions dissociated from temperament, and therefore unpardonable. When he began his university studies, he had already decided for medicine, against the will of his sombre parent, who wanted to make him a public official. He began at Bonn, where he found everything subordinated to the life of the Corps and the *Mensur* (duelling), which disgusted him as whetting artificial hatreds between the Saxon, Prussian and Westphalian students, of which he bore the brunt, in one instance, all his life. Naunyn soon left Bonn for Berlin, where university life was dominated by the sound axiom of Fichte: "A student is one who studies." Here he was most influenced by his anatomical training under Reichert and by the permanent tradition, established by Johannes Müller, that the chief end of university training is investigation, in the sense of working on the confines of knowledge in order to ascertain new facts. Naunyn's particular find, the cilia on the inner surface of hydatid cysts, proved of value to him in his graduating dissertation and subsequently, but he maintains that working over hydatid livers ruined his digestive system forever. In the last semester, he came into the clinic of Frerichs, the great pioneer of what is now called "group-diagnosis," who at once captivated him by his clear, plastic, withal classical presentation of bedside findings and determined

his subsequent career as internist. During his year of voluntary military service, which was not particularly brilliant, Naunyn had himself transferred without difficulty to the Charité, then a part of the army establishment, and having played a highly creditable part in the Silesian typhus epidemic, became Frerichs' clinical assistant for nine years. The strange personal traits of Frerichs—his exaggeration of the distant Nordic attitude, his blank indifference to administration, his easy-going tolerance of students, whom he never nagged or bullied but treated "as if essential organs of his own body," have long become familiar through Naunyn's account of Berlin clinical teaching in the sixties (1908).[2]

Naunyn once misled his chief, by an alleged diagnosis of Asiatic cholera, and caught no wigging whatever, but his conscientious, overweening disposition got him into hot water with the administrative chief of the Charité, an old first sergeant, who twice deprived him of his position. In retrieving himself, he proved adroit and alert to a degree, but ethically he had already attained his *consecratio medici.* In the small hours of a winter Sunday, a man was brought into the Charité frozen to death in the streets of Berlin. Intrigued by the fresh, rosy appearance of the corpse, Naunyn worried all night about the case, and at daybreak hurried to the morgue. We have a striking picture of the lonely dead-house in the hard, bright light of a Berlin winter morning, the anxious young physician bending over the corpse, to be reassured by the experienced *Diener* that the fancied heart-beats are merely his own. At the end of his long period in the Charité, came a call to Dorpat, where he became inured to the rigors of Russian winters and lead a pleasurable existence with his associates ("Baltic barons all"), including the celebrated Baer.

At Dorpat, too, he got to know Russia and Russian character at first hand. In 1866 Naunyn participated in the Austro-Prussian Campaign. Much of his time was spent

[2] Naunyn: *Die Berliner Schule vor 50 Jahren.* Leipzig, 1908.

in trying to find his army corps and field hospital, of which he was for a while the only member—a common experience. When the hospital was assembled, there were no wounded. Life began to hang heavily on Naunyn's hands and he spent the period following the cessation of hostilities in travelling. He took the campaign of 1870-71 very seriously, applied for service at headquarters, but being attached to a Russian University, was told by the Surgeon General to restrain his military ardor, go back to his professional duties and await developments. To his disgust, his passport from Dorpat to Berne was later held up by the Department Commander, on the ground that he had not participated in the hostilities. He gives a striking picture of the ten days of preternatural stillness following the order for mobilization in Berlin. His Dorpat period lasted three years (1869-71), then came a call to Berne (1871-2), where he found an able medical faculty and excellent facilities for clinical teaching. Here he began to realize his personality and to enjoy his academic life, but with the call to Königsberg (1872-88), his troubles began. In spite of certified assurances that he would be provided with suitable clinical material, he met with a frosty reception, with studious intransigence amounting to stiff opposition. Year after year, he had to block a determined movement to take away his polyclinical material, by invoking central authority in Berlin. Irritated by this opposition, he was not particularly diplomatic in social relations and thus added fuel to the flame. All this was changed by his marriage with his cousin Anna, a lady of joyous nature, to whom he devotes several pages of unstinted praise. A long honeymoon spent in travel sufficed to brush away his mental cobwebs and he now began to participate in the larger social life of East Prussia and to acquire an extensive practice, mostly Russian and often necessitating long journeys on consultation into Russia, even to Smolensk. He took up hunting, acquired a lodge at Theerbude in the Rominte forest, near the Russian frontier, spending his summers there until the locality became the hunting preserve of the Emperor (William II).

In the summer of 1887, it began to be rumored that Kussmaul would give up his Strassburg chair and Naunyn was slated to succeed him. The Strassburg period (1888-1904) was a repetition of the Königsberg period. Naunyn found the university clinic spacious, but in wretched condition, and it was stipulated that he was to have a new building. There was again intransigence and intrigue, this time lasting fourteen years, but a call to Vienna, in 1893, was rejected on account of the faulty sanitation of the hospital. When at length, the new clinical institute at Strassburg was opened on February 2, 1902, Naunyn was on the verge of retirement. His opponents did not see, as he ironically observed, that he had really been working for his successors. Recklinghausen, whom he admired and respected, had been a bitter, tyrannical opponent, and after the long, stressful Faculty meetings, poor Naunyn had to take large doses of potassium bromide to quiet his nerves and get a night's sleep. Grave attacks of influenza and appendicitis and an almost fatal bout of pneumonia undermined his health and suddenly he found himself an old man, with diminishing *joie de vivre,* in spite of the temporary rejuvenation occasioned by the completion of his hospital. He retired to Baden Baden, lived through the painful war period and died on July 26, 1925. A physician of splendid character, insight and principle, he had been bitterly penalized in his life by the senseless barbarities of the *medicus medicum odit.*

Naunyn's scientific reputation is based upon his work in experimental medicine, which derived from the great Müller tradition of his Berlin days and from his association with Klebs and Schmiedeberg, with whom he founded the *Archiv für experimentelle Pathologie* (1872). As a clinician, he was keen, able, conscientious, the outstanding exemplar of the Frerichs tradition, but without genius. In clinical teaching, he was at his best, as evidenced by his going, forceful discussion of the subject, which deserves translation. He will always be remembered by his work on metabolism in diabetes, hepatic and pancreatic diseases, which was accomplished in this wise:

The starting point of Naunyn's interest in the role of the liver in metabolism was Frerichs' discovery of leucin and tyrosin, which intrigued his pupils as possible preliminary phases of urea-formation. Naunyn's work on retention of urea (with the excretion of acids and ammonia) in fevers received a mighty impetus from the discoveries of the derivation of urea from ammonia (Schmiedeberg-Schröder) and of the dependence of ammonia-excretion in the urine upon acidosis (Schmiedeberg-Walther) which Naunyn regarded as the pathway into the study of intermediary metabolism in disease. Having demonstrated the dependence of ammonia excretion upon acidosis in man, he found this principle to be best illustrated in the colossal ammonia excretion in diabetes (Hallervorden, 1879). The concept "acidosis" having been established and named, Naunyn put Stadelmann upon the problem of finding the particular acid implicated. After manifold labors, Stadelmann found an enormous deficit of the ordinary known acids, but, by treatment of the syrupy urine with $H_2SO_4$, got alpha--crotonic acid, which he assumed to be the unknown substance. But as acetone and aceto-acetic acid were also in the urine, Naunyn pointed out that the real acid activating acidosis must be one which can engender alpha-crotonic acid and the two acetone bodies. By ransacking the Gorup-Besanez text book, Minkowski, Stadelmann's successor, found that this condition is fulfilled by beta-oxy-butyric acid (Külz, 1884), which was actually obtained as a crystalline sodium salt by Magnus Levy, twenty years later. The establishment of acidosis led to Naunyn's scheme of treatment for diabetes, *viz.*, carbohydrate tolerance by exclusion of albumin and meat from the diet. In attempting to exclude the liver for metabolism experiments, Naunyn failed because he chose anastomosis between the portal vein and the right renal vein instead of the inferior vena cava (Eck fistula); but he recalled, from Stannius' Comparative Anatomy, that, in birds, the anastomosis between the cava and portal vein is effected in nature by Jacobson's vein, and put Minkowski on to the problem. Metabolism after exclusion of

the liver was then studied in geese, which led to the study of hematogenic jaundice (formation of bile pigment from hemoglobin without disease of the liver). Naunyn claims the discovery of the Kupffer cells before they were baptized as such and other things of moment, but that, alas, is a weakness of all physicians who have failed to establish priority by publication. To the Strassburg period belongs Minkowski's extraordinary success in experimental excision of the pancreas (pancreatic diabetes, 1899), the first step toward the discovery of insulin.

As an exhaustive personal exposition of modern phases of clinical investigation and teaching, closing with these problems on all sides, Naunyn's autobiography is unquestionably the most important book in the literature of medicine, a book which would be better known, had it been provided with a serviceable subject-index. It is of very unequal merit, much too long and apparently written at odd intervals, in varying moods, with the usual Germanic disregard for literary style. One has only to contrast the abrupt, sometimes ambiguous sentences of the opening chapter, with the graphic pages on winter journeys into Russia, the Mazurian lakes, the hunting grounds of the Rominte Heath, the sand-dunes of the Kuhrischen Nehrung or the enthusiastic rhapsodies on Italian travel and Bayreuth opera. The tone is intensely serious throughout, with a few stray purple patches of humor here and there. The anecdotes related by the talented wife of the ophthalmologist, Julius Jacobson, are highly entertaining. As Fräulein Haller, she had been a beautiful diva, in fact the Venus of the Weimar performances of Tannhäuser, which role she realized to plenitude. In the darkness of the vanishing scene at the end of the Bacchanale, she found herself assailed by a species of ecstatic manhandling which necessitated the loud cry for help. The lights on, the culprit was revealed as none other than Richard Wagner, whose physical equipment for dazzling the fair consisted in an overly large head over a "bag of bones" framework. He offered the usual lame excuse, that he was "really paying her a great compliment." In later years,

this lively, humorous lady attained to vast physical proportions and once chased thieves out of her cellar by advancing upon them with her maid. "They must be very bold thieves indeed," she said, "who would not run when Mina and I appear in nightly garb." Another amusing story goes back to the Königsberg period. Through the stupidity of a *Diener* in the Pathological Institute, a high official found that the corpse of his wife, who had died in hospital, had got into the wrong coffin, which was then intercepted by telegram, just before lowering into the grave.

Naunyn was skillful in delineating character. His book abounds in effective portrait sketches of his colleagues, of which that of Edwin Klebs is typical:

"Klebs was a highly gifted morphologist, ranking with Recklinghausen among the pathologists. The first volumes of his Pathological Anatomy, unfortunately never completed, are the best of their kind since Rokitanski. It is to be regretted that he gave up morphology and turned to bacteriology. For experimentation and experimental bacteriology he had neither the training nor the talent. As long as he dealt with naked-eye appearances, he was a sure, tranquil investigator, but under the microscope, his intuitions about bacteria were ruled by his imagination and in experimentation he was uncritical. He it was, nevertheless, who for a decade, bore aloft the standard for the bacterial theory of communicable diseases. By the introduction of solid culture media, he did enduring service, but discoveries of permanent value it was not given him to make. With genuine regret I realized how he lost himself more and more in blind alleys after such brilliant beginnings. Klebs was of warm hearted, attractive personality, but his ungovernable temper made the course of friendship a purgatory of stormy encounters. Yet it often happened that he respected those who met his onset vigorously. We were close friends. A deceased child of his was my godson, and the constant strain put upon the

bonds of friendship by the uncertain temper of this valued and well-meaning colleague remains among my saddest recollections."

Endowed with a scientific mind of a high order, Naunyn was more characterful than intelligent, and *comme caractère,* he was peculiar. Shut up within himself (autistic), with all the implications of the *nordischer Haltung* (keeping the world at a distance), he was supersensitive, captious, overweening, and did not like to be crossed, especially by official superiors. He is, withal, very frank about his faults, in particular, a reckless, impetuous contempt for consequences amounting to brusque disregard for the personal rights of others (*Rücksichtslosigkeit*). In a hunting conveyance holding four people, he once took a rotten wooden bridge at top speed, the strength of the horses pulling the rear wheels up the bank as the planks fell apart over the abyss. His friendship with his Polish colleague, Nencki, whom he had once saved from being blown to pieces by nitroglycerine, was abruptly terminated by referring to his prospective wife (a reigning beauty) as "a goose" (*Um Gottes willen, Nencki mit der Gans!*). Nencki wanted to fight a duel about it, but the marriage proved unhappy, as Naunyn had predicted, turning the gentle physiologist into "a cynical rough-neck."

Naunyn was once characterized as "a devastating truth-teller" (*wahr bis zur Herbheit*), which he regarded as the highest compliment ever paid him. His thunderous denunciations of the rough handling he first encountered in Königsberg, as compared with his cordial reception at Dorpat and Berne, occasioned some facetious verses by Gottfried Keller:

> "Wer ist der Schlachtenlärmer,
> Man hört ihn schon von fern,
> Der sonderbare Schwärmer
> Von Dorpat und von Bern?"

There is a paragraph about the domestic arrangements of Frerichs, so well executed that it might have come out of Flaubert (*Cœur simple*) or Sudermann (*Indische*

*Lilie*). One can understand Naunyn's concern to elucidate the Nordic temper of his master, who after years of devotion, suddenly turned upon his pupil with acrimony; but to tattle about the lady (who had done him no harm) seems a thought spiteful. Try him, however, at his best, on a Russian journey, or in the deep forests on the Russian frontier or the Mazur:

"The poetry of solitude shed such a glory about our little house on the heath that my remembrance of it seems fabulous. In Christmas week we usually fled our family troubles, arriving at Theerbude late in the evening. After an hour's walk through the dim woods, we stood before our tiny shack, standing out brightly in the gloomy night, with gigantic icicles depending from the roof, while all about was snow and dark forest; or again, we sat silently together of autumn evenings, to the murmuring of the boughs, the mournful hooting of the white owl, until, at length, like the roaring of lions, the ominous baying of stags in rut made the windows rattle! All about us free, untamed nature and we the lords of the lonely heath!"

Lacking the large world-outlook which Humboldt and Haeckel, Darwin and Huxley acquired by travel in the far East and West, Naunyn was really made for a life of this kind, his natural offset to the narrow, coercive, proselyting spirit which goes with small-town origins. The passion of his professional career was for clean, spacious hospitals and adequate clinical material for teaching students, but he was never diplomatic or clever in attaining these ends and, with the exception of Vienna, he was never offered a first-class university chair. A standing invitation to successive meetings of the British Medical Association was rejected annually because the specification "Lodging with breakfast, without dinner" seemed to reflect upon his "competence as a guest." The intention of the practical English—that the "guests" were expected to meet colleagues by invitation at specially arranged dinners and lunches—utterly escaped him. He thought gatherings of men superficial and valueless. Without the ladies, there

was a tendency to talk shop and to rehearse the inevitable outworn, outlawed "stories," which stirred his ire like "the obligato chiming of *Ueb' immer Treu' und Redlichkeit* every quarter of an hour from the belfry of the garrison-church at Potsdam."

Late in life, Naunyn learned to respect form in writing and speaking and concludes that speeches and papers for important occasions should be carefully written out and read from manuscript, since "facile extempore speaking makes for thoughtless verbiage." He believed that the practice of medicine is no more of an "art" than the practical applications of physics or mathematics, since our supposed clinical "intuitions" are really conditioned by knowledge and experience and "wherever science leaves off, we are upon shaky ground. The 'intuitions' of the ignorant are pure fantasies." Hostile as Osler to the idea of marriage for young medicos, he was remarkably successful with students and was stampeded by them on only one occasion, which he coolly disposed of in a few patient sentences. "The good students," he would say, "one must not take their praise or blame too seriously. To lose one's head by getting angry with them is fatal."

The signed profile photograph of Naunyn which hangs in the Surgeon General's Library, a picture taken in middle life, has been much admired, as conveying his rugged, veracious character—

"Here's John the Smith's rough-hammered head. Great eye,
Gross jaw and griped lips do what granite can
To give us the crown-grasper. What a man!"

At the beginning of his book, he flatly declines to romance about his youth: *Solchen Missbrauch der "seltsamen Tochter Jovis" mache ich nicht mit.* The best of Naunyn—his firm character, his honorable nature, his active, scientific intelligence, his well-ascertained culture, his steadfast devotion to duty, his uncompromising love of truth—is in that sentence.

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